

WHAT IS CLAIMED IS:

1. A method for generating an x-ray beam, said method comprising the steps of:

operating a cathode to generate an electron beam;

directing the electron beam from the cathode through a selectable shaped aperture in an accelerating electrode; and

impinging the electron beam at a low angle on an anode surface to form a focal spot on the anode surface.

2. The method of claim 1, wherein the low angle is at most about twenty degrees.

3. The method of claim 1 further comprising forming the focal spot on an outer periphery of the anode surface.

4. The method of claim 1 further comprising housing the accelerating electrode in a central recess of the anode.

5. An x-ray source comprising:

a cathode for generating an electron beam;

an accelerating electrode comprising a selectable shaped aperture through which the electron beam from said cathode passes; and

an anode positioned so that the electron beam impinges thereon at a low angle.

6. The x-ray source of claim 5, wherein the low angle is at most about twenty degrees.

7. The x-ray source of claim 5, wherein the anode comprises a disk shape, the disk shape being defined by an outer periphery, an inner periphery and a central recess, and wherein the central recess houses the accelerating electrode.

8. An imaging system comprising a gantry, a detector and an x-ray source coupled to said gantry, said x-ray source configured for radiating an x-ray beam along an imaging plane toward said detector, said x-ray source comprising a cathode for generating an electron beam, an accelerating electrode comprising a selectable shaped aperture through which the electron beam from said cathode passes, and an anode positioned so that the electron beam impinges thereon at a low angle.

9. The imaging system of claim 8, wherein the low angle is at most about twenty degrees.

10. The imaging system of claim 8, wherein the anode comprises a disk shape, the disk shape being defined by an outer periphery, an inner periphery and a central recess, and wherein the central recess houses the accelerating electrode.

11. An x-ray source comprising:

means for generating an electron beam,

means for accelerating electrons in said electron beam away from said generating means, and

means for generating x-ray beams when said electron beam impinge thereon at a low angle.

12. The x-ray source of claim 11, wherein the low angle is at most about twenty degrees.